

WPI

What Makes Good Teaching?

Creating Instructional Standards for First-Year Calculus at WPI

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GPS: Ignorance is NOT Bliss

Background

- A strong foundation in calculus is important for engineering students
- How to define “good teaching”?
- Good teaching leads to better retention of material
- Currently, effectiveness varies across the curriculum

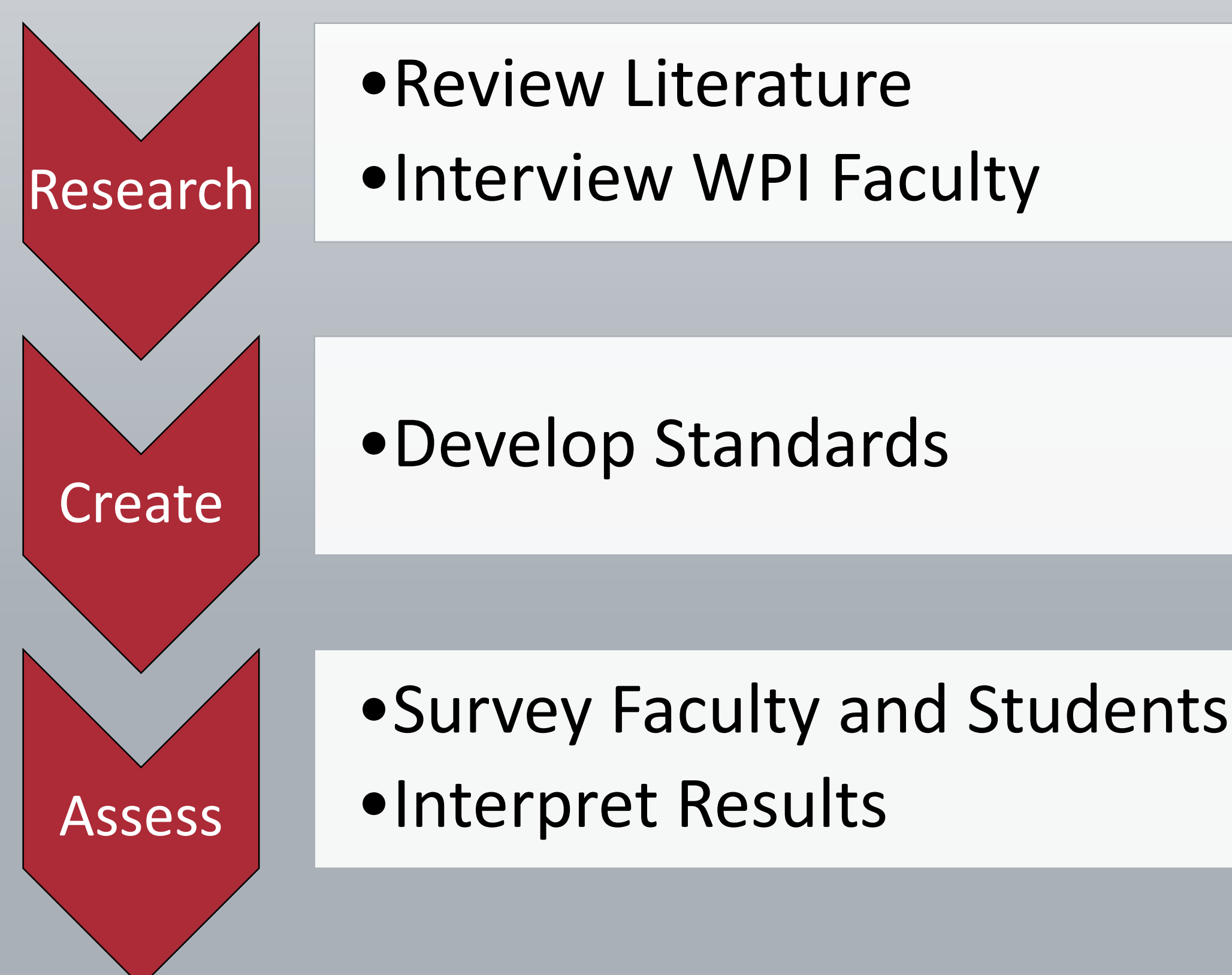
Problem

There is no set of instructional standards for first-year calculus at WPI available for students' reference

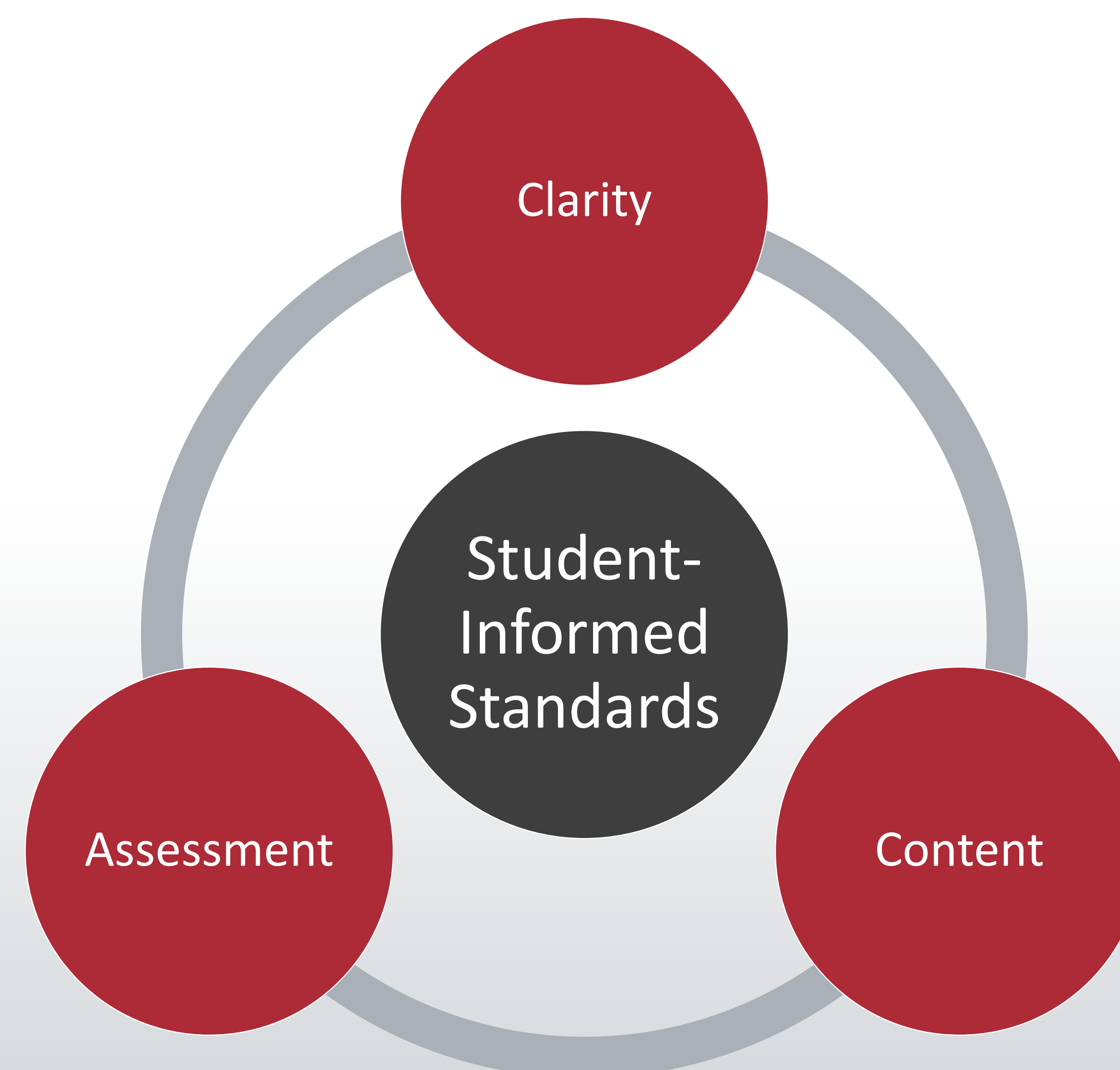
Solution

Create a set of instruction methodology standards for first-year calculus at WPI with input from both faculty and students

Approach



Developing Standards



Faculty Testimonials

- “Currently the labs are disjoint from the lectures - this is not ideal.”
- “Students should effectively and clearly *ask* questions in class or during office hours.”
- “The implementation challenge is that what professors think is clearly explained may not meet students' expectations.”

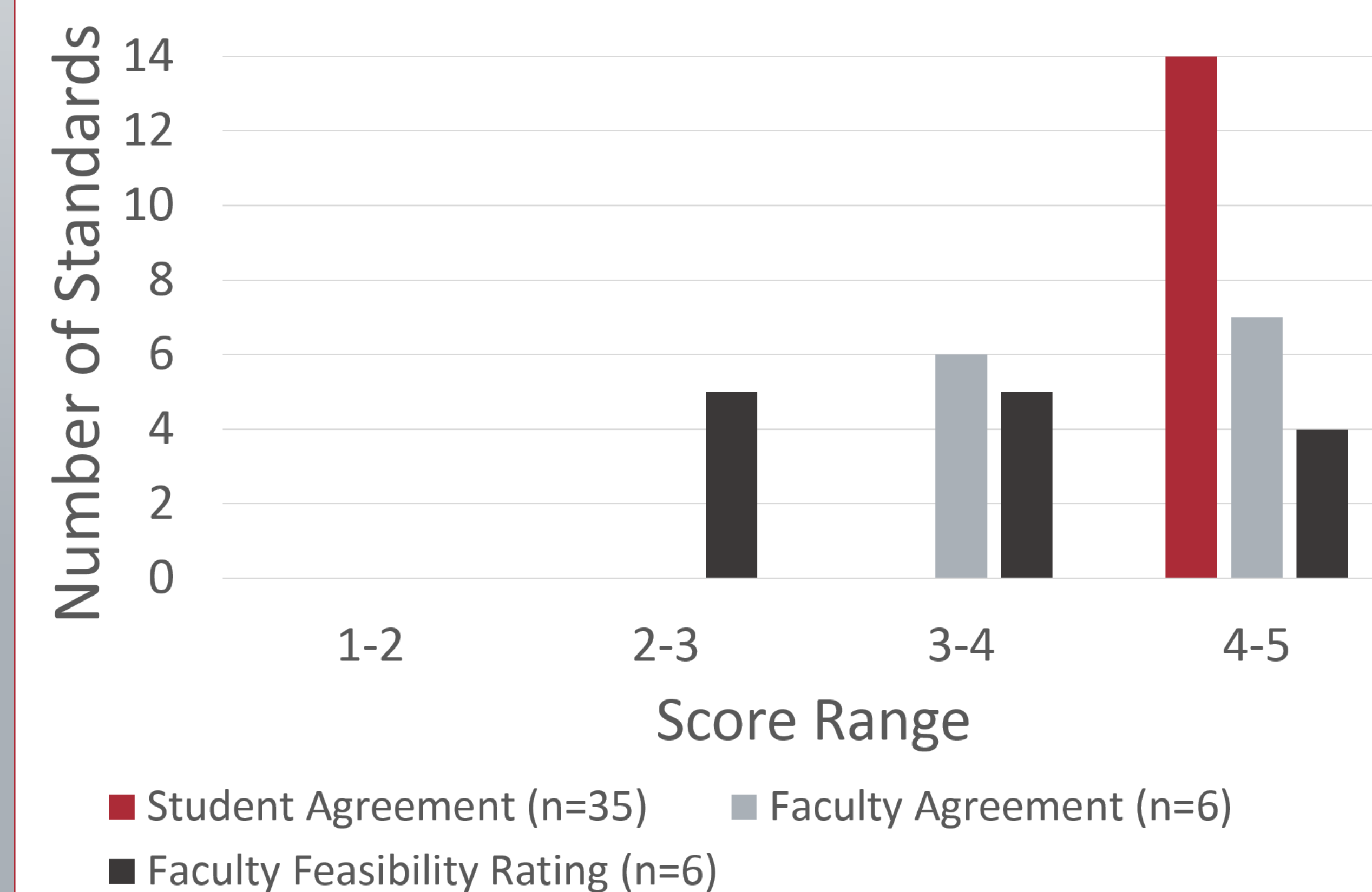
Student Testimonials

- “If the professor posts his/her notes online then students can listen to the content in class and ask questions, instead of just trying to write down all the notes.”
- “It's really the students' decision to pay attention, but engaging the students keeps the lectures interesting.”

Results

- All 14 standards received an average rating between four and five from students
- Teacher response to the standards was also positive, but less so than students'
- Teachers tended to agree more with standards in general than with feasibility
- Seven standards received an average agreement rating between four and five from teachers
- Four standards received a rating between four and five for student agreement, teacher agreement, and feasibility

Score Distribution of Standards



Acknowledgements

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References

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